

spirax sarco®

PN5000 Series Fail Closed Pneumatic Actuators

Description

A range of compact linear actuators having 6 diaphragm sizes for matching the requirements of different valves at various differential pressures. Each actuator is fitted with mechanical stroke indicators and incorporates a rolling diaphragm to give linearity over the full operating stroke. For precise valve positioning on modulating applications and when using higher pressure spring range actuators a positioner must be used. The actuators are designed for easy conversion to spring retract spindle operation (and vice versa) in the field using the same components and without the need of special tools.

Actuator Travel

3/4" (20mm)
1-3/16" (30mm)

Valve type

1/2" to 2" L and K Series
2-1/2" to 4" L and K Series

Technical data

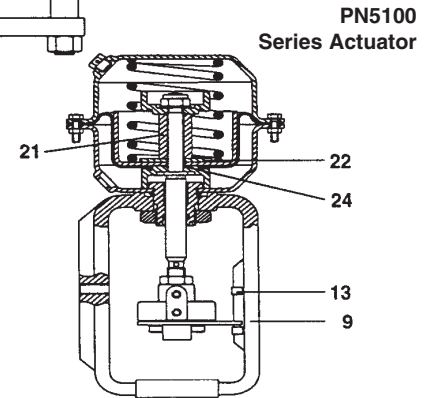
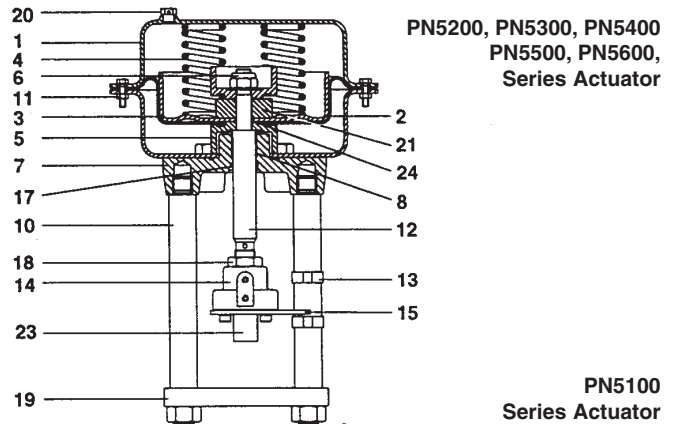
Temperature range		-4 to 230°F
Maximum operating pressure	PN5100/PN5200/PN5300/PN5400	90 psi
	PN5500/PN5600	35 psi

Spring ranges

Actuator types	Spring range	Travel
PN5120	3 (6) - 15 (18)	3/4"
PN5126	15 - 30	3/4"
PN5123	30 - 60	3/4"
PN5220	3 (6) - 15 (18)	3/4"
PN5226	15 - 30	3/4"
PN5223	30 - 60	3/4"
PN5320	3 (6) - 15 (18)	3/4"
PN5326	15 - 30	3/4"
PN5323	30 - 60	3/4"
PN5330	6 - 18	1-3/16"
PN5336	15 - 30	1-3/16"
PN5333	30 - 60	1-3/16"
PN5420	3 (6) - 15 (18)	3/4"
PN5426	15 - 30	3/4"
PN5423	30 - 60	3/4"
PN5430	3 (6) - 15 (18)	1-3/16"
PN5436	15 - 30	1-3/16"
PN5433	30 - 60	1-3/16"
PN5520	3 (6) - 15 (18)	3/4"
PN5524	12 - 22	3/4"
PN5530	3 (6) - 15 (18)	1-3/16"
PN5534	12 - 22	1-3/16"
PN5620	3 (6) - 15 (18)	3/4"
PN5624	12 - 22	3/4"
PN5630	3 (6) - 15 (18)	1-3/16"
PN5634	12 - 22	1-3/16"

Air supply connection

Actuator type	Connection
PN5100 and PN5200 series	1/8" NPT
PN5300 and PN5400 series	1/4" NPT
PN5500 and PN5600 Series	1/4" NPT



Materials

No. Part	Material	
1	Diaphragm housing	Pressed steel
2	Rolling diaphragm	Fabric reinforced nitrile rubber
3	Piston	Pressed steel
4	Spring	Spring steel
5	Diaphragm clamp casting	Stainless steel
6	Nyloc nut	Steel
7	Baseplate	SG iron
8	DU bearing	PTFE/Steel composite
9	Yoke (PN5100 series only)	Aluminium
10	Pillars	Steel
11	Housing securing nuts & bolts	Steel
12	Spindle	Stainless steel
13	Travel indicators	Spring steel
14	Connector	Steel
15	Indicator plate	Steel
17	'O' ring	Rubber
18	Lock-nut	Steel
19	Mounting flange	Stainless steel
20	Cap (with vent hole)	Nickle plated brass
21	Spacer	Steel
22	Spring location washer (PN5100 series)	Steel
23	Adaptor	Steel
24	'O' ring	Rubber

Differential pressures

Size	1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"	
Travel inches	3/4"						1-3/16"			
Standard C _{VS} value	0.5 to 4.7	7.4	11.7	18.7	29.3	42	74	117	187	

PN5000 series actuators (spring extend spindle)

Type	Model	Spring range	Air pressure required (min.) psi	Positioner required	Maximum closing pressures ¹ in psi (* See note reference differential pressures)								
					1/2"	3/4"	1"	1-1/4"	1-1/2"	2"	2-1/2"	3"	4"
PN5100 Series	5120	3 to 15	20	Optional	110	70	15	-	-	-	-	-	-
		6 to 18	25	Optional	255	145	60	-	-	-	-	-	-
	5121	3 to 9	20	Yes	110	70	15	-	-	-	-	-	-
	5122	9 to 15	20	Yes	395	220	110	-	-	-	-	-	-
	5126	15 to 30	40	Yes	580	233	118	46	16	-	-	-	-
PN5200 Series	5220	3 to 15	20	Optional	310	175	80	30	25	10	-	-	-
		6 to 18	25	Optional	496	360	190	85	65	30	-	-	-
	5226	15 to 30	40	Yes	580	580	451	212	116	64	-	-	-
	5223	30 to 60	70	Yes	580	580	580	550	370	200	-	-	-
PN5300 Series	5320	3 to 15	20	Optional	505	280	145	60	45	20	-	-	-
		6 to 18	25	Optional	580	475	320	150	108	55	-	-	-
	5321	3 to 9	20	Yes	495	275	145	60	45	20	-	-	-
	5322	9 to 15	20	Yes	580	580	495	240	165	85	-	-	-
	5326	15 to 30	40	Yes	580	580	580	348	197	114	-	-	-
	5323	30 to 60	70	Yes	580	580	580	580	435	320	-	-	-
	5330	6 to 18	25	Optional	-	-	-	-	-	-	10	-	-
	5336	15 to 30	40	Yes	-	-	-	-	-	-	55	30	15
5333	30 to 60	70	Yes	-	-	-	-	-	-	165	105	65	
PN5400 Series	5420	3 to 15	20	Optional	580	460	250	120	85	40	-	-	-
		6 to 18	25	Optional	580	580	535	265	180	95	-	-	-
	5421	3 to 9	20	Yes	580	450	250	120	85	40	-	-	-
	5422	9 to 15	20	Yes	580	580	580	400	275	150	-	-	-
	5426	15 to 30	40	Yes	580	580	580	558	325	192	-	-	-
	5423	30 to 60	70	Yes	580	580	580	580	435	435	-	-	-
	5430	6 to 18	25	Optional	-	-	-	-	-	-	35	15	5
5436	15 to 30	40	Yes	-	-	-	-	-	-	105	65	38	
5433	30 to 60	70	Yes	-	-	-	-	-	-	290	185	120	
PN5500 Series	5520	3 to 15	20	Optional	580	580	490	230	165	80	-	-	-
		6 to 18	25	Optional	580	580	580	520	350	185	-	-	-
	5524	12 to 22	30	Yes	580	580	580	580	435	390	-	-	-
	5530	3 to 15	20	Optional	-	-	-	-	-	-	55	35	20
6 to 18		25	Optional	-	-	-	-	-	-	110	75	45	
5534	12 to 22	30	Yes	-	-	-	-	-	-	225	150	95	
PN5600 Series	5620	3 to 15	20	Optional	580	580	580	320	230	110	-	-	-
		6 to 18	25	Optional	580	580	580	580	435	260	-	-	-
	5624	12 to 22	30	Yes	580	580	580	580	435	435	-	-	-
	5630	3 to 15	20	Optional	-	-	-	-	-	-	75	50	30
		6 to 18	25	Optional	-	-	-	-	-	-	155	105	65
5634	12 to 22	30	Yes	-	-	-	-	-	-	315	210	130	

¹ (THE ABOVE CLOSING PRESSURES ARE BASED ON ZERO AIR IN ACTUATOR!)
Maximum delta P on LSeries Valves is 200 psig

*Differential pressures

Differential pressures shown above to valves having chevron or below sealed stems with either metal to metal or PTFE soft seat. For valves having graphite packed stem seals refer to Spirax Sarco.

Reduced capacity (C_{VS}) valves

For valves having reduced capacity C_{VS} trims differential pressures should be selected from the above chart using the actual C_{VS} value column and not the valve size column.

For product compatibility with 2-1/2", 3", and 4" valves 1-3/16 travel actuators must be selected for all trim options. For valves having 3/4" travel reduced C_{VS} trims it is therefore recommended to use a positioner to obtain the desired travel.

Spring setting

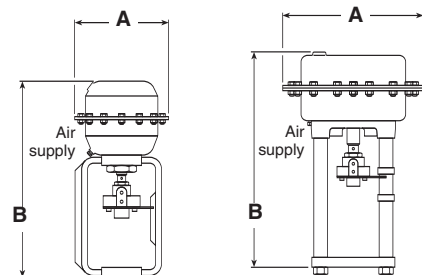
If specified, 3-15 psi Spring Range can be 'Set' at 6-18 psi bar to provide higher maximum differential pressures. This higher range is 'Set' when the Valve and Actuator are assembled together prior to despatch or by following the procedure given in the Installation and Maintenance Instructions provided with the product.

Installation

Actuators should be mounted with the stem in a vertical position. Installation and Maintenance Instructions are supplied with the product.

Spare parts

Information regarding spare parts available is given on TIS 1.514



Dimensions/weights (approximate) in inches and lbs.

Actuator	A	B	Weight
5100 Series	5-3/4"	11-3/8"	7.5
5200 Series	8-1/2"	12-3/4"	13.2
5300 Series	9-7/8"	13"	20.5
5400 Series	12"	14-1/2"	35.2
5500 Series	15-7/8"	15-3/4"	57.0
5600 Series	18-3/8"	15-3/4"	79.3

How to order

1 off PN5220 Pneumatic Actuator (Specify 'Set at 6-18 psi range' if required).

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